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Engineering Note

Date: 4 October 2002
Rev Date:

Project: DFEA
Doc. No: 2002-10-04a

Subject: DFEA power supply upgrade

Summary

There are two DFEA power supplies are located on the center platform in rack PC03, crate numbers 3 and 2. These crates require +3.3V @ 160A and +5V @ 40A (max). The original power supplies had +3.3V outputs operated in remote sense mode. At high currents the +3.3V output was increasing to the upper limit (~3.8V) to attempt to compensate for the voltage drop on the cables. Under these conditions the backplane voltage was low (around 3.15V) causing the DFEA boards to go into RESET.

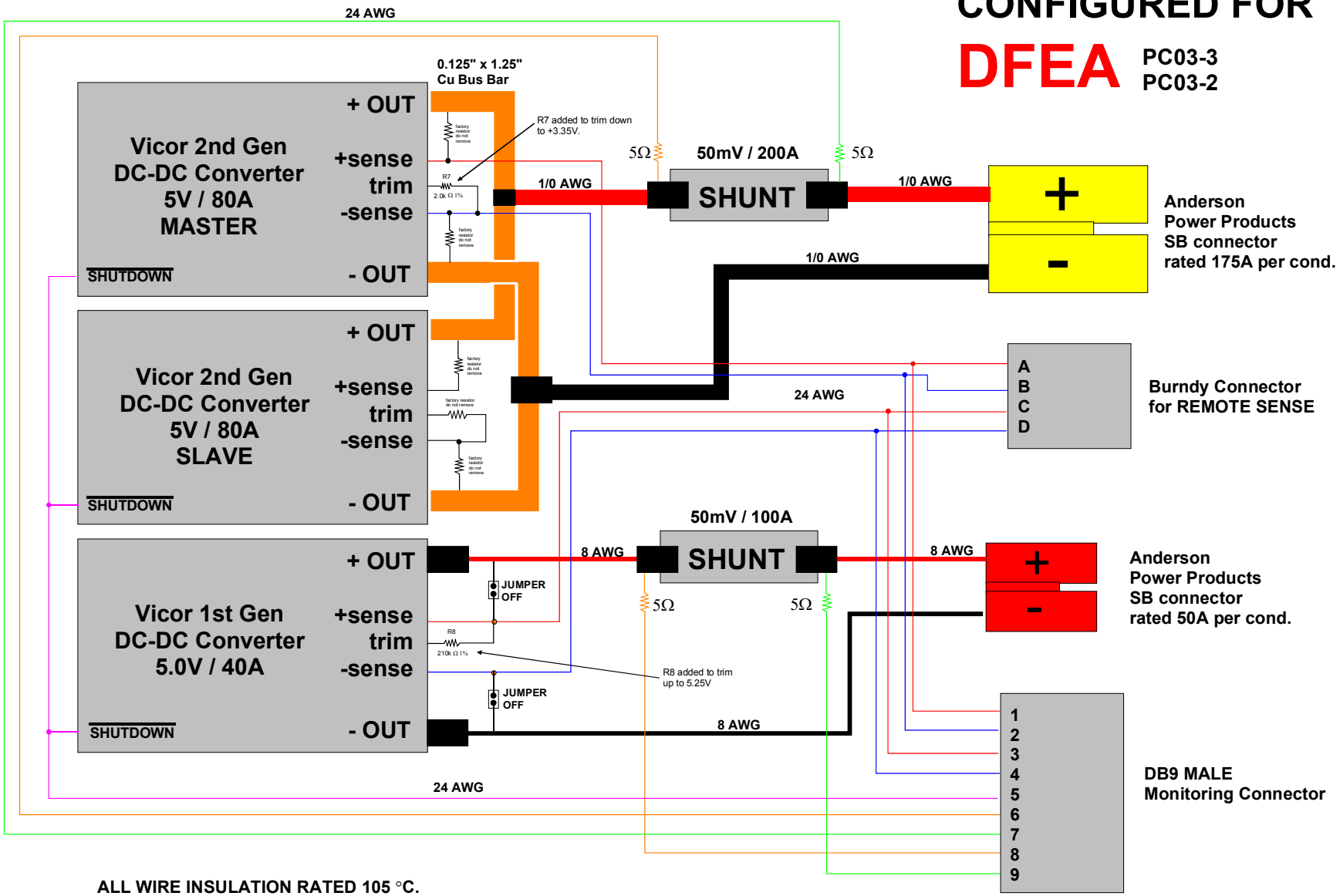
Installing parallel power cables helped with the voltage drop, but it was an intermediate kludge. The proper fix is to install a new PFC Mini supply with 5V outputs trimmed down to +3.35V and operated in remote sense. In this way the upper limit on the supplies is higher – almost 5.5V, so there is plenty of room for the supply to compensate for voltage drops in the cable, even under full load. This engineering note addresses how to build up the new supplies.

NOTE:

The supply is configured for REMOTE sense. When bench testing under load the remote sense cables must be connected, or else damage will occur.

PFC MINI SUPPLY CONFIGURED FOR DFEA

PC03-3
PC03-2



ALL WIRE INSULATION RATED 105 °C.
ALL RESISTORS 1/4W
DC-DC CONVERTERS HAVE ISOLATED OUTPUTS
THIS SUPPLY *MUST* BE USED IN REMOTE SENSE MODE

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